

Appl. No.: 10/791,533
Attorney Docket No. 26047

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. to 8. (Canceled)

9. (New) A probe for detecting a short-circuit caused by an electrical short between a first electrically conductive element located in a probed area and a second electrically conductive element, said probe comprising:

a probe body having a housing;

an electrically conductive probe pin mounted within an internal cavity of the housing, said probe pin having a first end and a second end, said first end being adapted for coupling to a source of electrical voltage;

a releasable clamp for clamping the second end of the probe pin to the probe area, while permitting the probe pin to effect electrical contact with the first electrically conductive element; and

a spring activated mechanism operatively coupled to the probe pin, for biasing the releasable clamp toward the probe area to assist attachment when the probe is primed and being adapted to allow limited displacement of the body of the probe away from the probed area while maintaining clamping of the second end of the probe pin to the probe area so as to maintain the electrical

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contact between the second end of the probe pin and the first electrically conductive element for a short time period on disengagement of the probe.

10. (New) The probe according to claim 9, wherein the probe pin has a first section and a second section joined to the first section, such that opposing ends of the first section and the second section define the first end and the second end, respectively, of the probe pin, and the spring activated mechanism includes:

a push spring wound around the first section of the probe pin, for biasing the releasable clamp toward the probe area to assist attachment when the probe is primed;

a limiter device mounted in association with the probe pin and a stoppage step within the internal cavity of the body, said limiter device being adapted to move with the probe pin, the limiter device serving to allow limited displacement of the body of the probe away from the probed area while maintaining clamping of the second end of the probe pin to the probe area so as to maintain the electrical contact between the probe pin and the first electrically conductive element until the limiter device engages the stoppage step, whereupon further displacement of the body of the probe displaces the probe pin away from the probe area thereby disengaging the releasable clamp from the probe area and breaking electrical contact between the probe pin and the first electrically conductive element; and

a return spring wound around the second section of the probe pin, said return spring being operable to retain said probe pin away from the probe area when the probe is inactive.

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11. (New) The short-circuit detection probe of claim 10, wherein the releasable clamp includes a magnet adapted to magnetically engage the second end of the probe pin and being adapted to effect magnetic coupling to the probe area.

12. (New) The short-circuit detection probe of claim 11, wherein said magnet is coupled to the second end of the probe pin.

13. (New) The short-circuit detection probe of claim 10, wherein said limiter device comprises a washer.

14. (New) An apparatus for monitoring continued registration of a sheet of material in a device for processing said sheet, the apparatus comprising:

- registration means for registering said sheet in a required position;
- a sensor adapted to cause a short circuit upon sensing a registration condition; and
- the probe of claim 9 coupled to the sensor for maintaining electrical continuity, thereby continuously monitoring said registration condition during a predefined sequence of operations.

15. (New) The apparatus of claim 14, wherein said sensor comprises an electrical sensor.

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16. (New) The apparatus of claim 15, wherein said sensor comprises an optical sensor.

17. (New) An apparatus for monitoring continued registration of a sheet of material in a device for processing said sheet, the apparatus comprising:

registration means for registering said sheet in a required position;

a sensor adapted to cause a short circuit upon sensing a registration condition; and

the probe of claim 11 magnetically connected to the sensor for maintaining electrical continuity, thereby continuously monitoring said registration condition during a predefined sequence of operations.

18. (New) The apparatus of claim 17, wherein said sensor comprises an electrical sensor.

19. (New) The apparatus of claim 18, wherein said sensor comprises an optical sensor.

20. (New) A probe for detecting a short-circuit caused by an electrical short between a first electrically conductive element located in a probed area and a second electrically conductive element, said probe comprising:

a probe body having a housing;

a non-magnetic, electrically conductive probe pin mounted within an internal cavity of the housing, said probe pin having a first section and a second

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section joined to the first section, such that opposing ends of the first section and the second section define a first end and a second end, respectively, of the probe pin;

a magnet adapted to magnetically engage the second end of the probe pin and being adapted to effect magnetic coupling to the probe area, while permitting the probe pin to effect electrical contact with the first electrically conductive element;

a push spring wound around the first section of the probe pin, for biasing the magnet toward the probe area to assure attachment when the probe is primed;

a limiter device mounted in association with the probe pin and a stoppage step within the internal cavity of the body, said limiter device being adapted to move with the probe pin, the limiter device serving to allow limited displacement of the body of the probe away from the probed area while maintaining magnetic coupling between the magnet and the probe area and maintaining the electrical contact between the probe pin and the first electrically conductive element until the limiter device engages the stoppage step, whereupon further displacement of the body of the probe displaces the probe pin away from the probe area thereby disengaging the magnet from the probe area and breaking electrical contact between the probe pin and the first electrically conductive element; and

a return spring wound around the second section of the probe pin, said return spring being operable to retain said probe pin away from the probe area when the probe is inactive.

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21. (New) An apparatus for monitoring continued registration of a sheet of material in a device for processing said sheet, comprising:

registration means for registering said sheet in a required position;

a sensor adapted to cause a short circuit upon sensing a registration condition; and

a probe magnetically connected to said sensor, for maintaining electric continuity, thereby continuously monitoring said registration condition during a predefined sequence of operations;

wherein the probe comprises:

a probe body having a housing and a cover, the housing defining an internal cavity having a profile;

a probe pin comprising an upper part and a lower part, the probe pin mounted within said internal cavity and comprising electrical connectivity and said lower part comprising a lower end connected to a magnet;

a push spring wound around the upper part of said probe pin, said push spring acting as a shock absorber when the magnet detaches from the probed area, said push spring alternatively pushing the magnet toward the probed area to assure attachment when the probe is active;

stoppage means mounted at the bottom of said push spring; and

a return spring wound around the lower part of said probe pin, said return spring being operable to retain said probe pin in an upper position when inactive;

wherein the profile of said internal cavity comprises a stoppage step for accommodating said stoppage means at its lowermost position.

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22. (New) The apparatus of claim 21, wherein said sensor comprises an electrical sensor.

23. (New) The apparatus of claim 21, wherein said sensor comprises an optical sensor.